

10/12/04

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. (Previously presented) A liquid crystal panel comprising:

a pair of substrates bonded to each other by a sealant;

a liquid crystal enclosed in an inner region delimited by the sealant

between the pair of substrates; and

electrodes formed on an inner side of each of the pair of the substrates;

terminals formed on the inner side of each of the pair of substrates for conducting between the substrates, the terminals being connected through a conductive particle included in the sealant; and

amended

an alignment layer formed on the electrodes and covering the inner region delimited by the sealant;

wherein the alignment layer is formed from the inner region to an intermediate portion of a sealant region on which the sealant is formed, along a side of the sealant provided with the terminals; and

the alignment layer crosses over the sealant region to an outer side of the sealant, along a side of the sealant other than the side provided with the terminals.

2. (Original) A liquid crystal panel according to claim 1, wherein the sealant is a one-part thermosetting epoxy sealant.

3. (Previously presented) A liquid crystal panel according to claim 1, wherein the alignment layer is formed up to a region overlapping the region for forming the sealant in the sections corresponding to the four sides of the substrate.

4. (Previously presented) A liquid crystal panel according to claim 1, wherein the alignment layer is formed up to edges of the substrates across the region for forming the sealant in the individual sides of the substrate excluding the side provided with input-output terminals and the terminals for conducting between the substrates.

5. (Previously presented) A liquid crystal panel according to claim 1, wherein the alignment layer is formed up to edges of the substrate across the region for forming the sealant in the individual sides of the substrate excluding the side provided with the input-output terminals for conducting between the substrates.

6. (Previously presented) A method of fabricating a liquid crystal panel defined in claim 1, wherein the electrodes are formed on the surface of a large substrate for forming a plurality of pairs of substrates in individual regions for forming the substrates which are divided by cutting the large substrate along cutting projection lines, and then thin films for forming the alignment layers are formed inside the region delimited by the sealant, and the alignment layers are also formed to partially overlap the sealant in a region for conducting between the substrates and to cross the regions

for forming the sealant in a region other than the region for conducting between the substrates.

7. (Original) A method of fabricating a liquid crystal panel according to claim 6, wherein the electrodes are formed on the surface of the large substrate for forming a plurality of pairs of substrates in the individual regions for forming the substrates which are divided by cutting the large substrate along cutting projection lines, and then the films for forming the alignment layers are formed on a plurality of substrate forming-regions including the cutting projection lines.

8. (Original) A method of fabricating a liquid crystal panel according to claim 7, wherein the electrodes are formed on the surfaces of a pair of large substrates for forming a plurality of pairs of substrates in the regions for forming the individual substrates which are divided by cutting the large substrates along cutting projection lines, the thin films for forming the alignment layers are formed on the plurality of substrate forming-regions including the cutting projection lines in each of the pair of large substrates, the sealant is formed on at least one of the pair of large substrates to bond the large substrates to each other, and the bonded large substrates are cut along the cutting projection lines.

9. (Previously Presented) A method of fabricating a liquid crystal panel according to claim 7, wherein, in the large substrate, the substrate forming regions are placed with a cutting projection line therebetween so that the sides provided with input-

output terminals and terminals for conducting between substrates are directed in the opposite directions, and when the thin films for forming the alignment layers are formed, the thin films are formed in stripes along the cutting projection line.

(10.) (Previously presented) A liquid crystal panel comprising:

a first substrate;

first electrodes formed on said first substrate;

a first alignment layer formed over said first electrodes;

a second substrate;

second electrodes formed on said second substrate;

a second alignment layer formed over said second electrodes;

terminals formed on an said first and second substrates for conducting between said first and second electrodes;

a sealant coupled between said first and second substrates so as to form a gap therebetween;

wherein each of said first and second alignment layers is formed on and covers an inner region delimited by the sealant;

the alignment layer is formed from the inner region to an intermediate portion of a sealant region where the sealant is formed, along a side of the sealant provided with the terminals; and

the alignment layer crosses over the sealant region to an outer side of the sealant, along a side of the sealant other than the side provided with the terminals.

amended

11. (Previously Presented) The liquid crystal panel of claim 10 wherein said first alignment layer is interposed between said sealant and said first substrate.

12. (Previously Presented) The liquid crystal panel of claim 10 wherein said second alignment layer is interposed between said sealant and said second substrate.

13. (Previously Presented) The liquid crystal panel of claim 10 wherein said first alignment layer extends to a perimeter of said first substrate.

14. (Previously Presented) The liquid crystal panel of claim 10 wherein said second alignment layer extends to a perimeter of said second substrate.

15. (Previously Presented) The liquid crystal panel of claim 10 wherein said side provided with said terminals for conducting between said first and second substrates includes input-output terminals.

16. (Previously Presented) The liquid crystal panel of Claim 10 further comprising:

a first transparent insulation film interposed between said first alignment layer and said first substrate over said first electrodes; and

a second transparent insulation film interposed between said second alignment layer and said second substrate over said second electrodes, said first and

second transparent insulation films complementing a configuration of said first and second alignment layers.

17. (Previously presented) A method of fabricating a liquid crystal panel comprising:

providing a pair of large substrates including a plurality of smaller substrate forming regions divided by a plurality of cutting lines, the liquid crystal panel fabricated by using each of the substrate forming regions;

forming electrodes on an inner side of each of the pair of large substrates;

forming terminals on each of the smaller substrate forming regions on the inner side of each of the pair of large substrates for conducting between the substrates, the terminals being connected through a conductive particle including in a sealant, the sealant bonding the pair of large substrates for every smaller substrate forming region; and

forming an alignment layer on the electrodes that covers an inner region delimited by the sealant;

wherein the alignment layer is formed from the inner region to a intermediate portion of a sealant region on which the sealant is formed, along a side of the sealant provided with the terminals; and

the alignment layer crosses over the sealant region to an outer side of the sealant, along a side of the sealant other than the side provided with the terminals.

amended

18. (Previously presented) The method of claim 17 wherein said alignment layer is deposited so as to overlap said sealing deposit region along each of said smaller substrate forming regions.

19. (Previously presented) The method of claim 17 wherein said alignment layer is deposited so as to overlap said plurality of projected cutting lines.

20. (Previously presented) The method of claim 17 further comprising depositing a sealant on said sealant region of each of said smaller substrate forming regions.

21. (Previously presented) The method of claim 20, further comprising:
bonding the pair of large substrates by securing said sealant to said second sealant region along each of said smaller substrate forming regions on said substrates; and
cutting said pair of substrates along said cutting lines.

22. (Cancelled)

23. (Previously presented) A liquid crystal panel comprising:

a pair of substrates bonded to each other by a sealant with a predetermined gap therebetween;

a liquid crystal enclosed in a region delimited by the sealant between the pair of substrates;

electrodes formed on an inner side of each of the pair of the substrates for controlling the alignment state of the liquid crystal;

terminals formed on the inner side of each of the pair of substrates for conducting between the substrates, the terminals being connected through a conductive particle included in the sealant; and

amended

an alignment layer formed on the electrodes and covering the inner region delimited by the sealant;

wherein the alignment layer is formed from the inner region to an intermediate portion of a sealant region on which the sealant is formed, along a side of the sealant provided with the terminals; and

the alignment layer crosses over the sealant region to an outer side of the sealant, along a side of the sealant other than the side provided with the terminals.

24. (Previously presented) A liquid crystal panel comprising:

a first substrate;

first electrodes formed on an inner side of said first substrate;

a first alignment layer formed on said first electrodes;

a second substrate;

second electrodes formed on an inner side said second substrate;

a second alignment layer formed on said second electrodes; and

terminals formed on the inner side of said first and second substrates for conducting between said first and second electrodes, the terminals being connected through a conductive particle included in a sealant;

amended

wherein the sealant is coupled between said first and second substrates so as to form a gap therebetween;

each of said first and second alignment layers is formed inside of and covers an inner region delimited by the sealant;

said first and second alignment layers is formed from the inner region to an intermediate portion of a sealant region on which the sealant is formed, along a side of the sealant provided with the terminals; and

said first and second alignment layers crosses the sealant region to an outer side of the sealant, other than the side provided with said terminals.

added

25. (Previously presented) The liquid crystal panel according to claim 1, further comprising a transparent insulation film formed on the electrodes so as to cover the inner region delimited by the sealant;

wherein the alignment layer is formed on the transparent insulation film, and the transparent insulation film and the alignment layer are formed from the inner region to an intermediate portion of a sealant region on which the sealant is formed, along a side of the sealant provided with the terminals; and

the transparent insulation film and the alignment layer cross over the sealant region to an outer side of the sealant, along a side of the sealant other than the side provided with the terminals.

added

26. (Previously presented) The method of claim 17, further comprising a step of forming a transparent insulation film on the electrodes so as to cover the inner region delimited by the sealant;

wherein the alignment layer is formed on the transparent insulation film, and the transparent insulation film and the alignment layer are formed from the inner region to an intermediate portion of a sealant region on which a sealant is formed, along a side of the sealant provided with the terminals; and

the transparent insulation film and the alignment layer cross over the sealant region to an outer side of the sealant, along a side of the sealant other than the side provided with the terminals.

[Name of Document] Application for Patent

[Reference No.] J0070358

[Date of Filing] August 31, 1998

[Addressee] Commissioner of the Patent Office

[Int. Cl.] G02F 1/133 111

[Title of the Invention] LIQUID CRYSTAL PANEL AND METHOD
FOR FABRICATING THE SAME

[The number of claims] 9

[Inventor]

[Address] c/o Seiko Epson Corporation, 3-5, Owa 3-
chome, Suwa-shi, Nagano-ken

[Name] Hiroki NAKAHARA

[Inventor]

[Address] c/o Seiko Epson Corporation, 3-5, Owa 3-
chome, Suwa-shi, Nagano-ken

[Name] Hideki UEHARA

[Inventor]

[Address] c/o Seiko Epson Corporation, 3-5, Owa 3-
chome, Suwa-shi, Nagano-ken

[Name] Takashi MIYAZAKI

[Inventor]

[Address] c/o Seiko Epson Corporation, 3-5, Owa 3-
chome, Suwa-shi, Nagano-ken

[Name] Takeshi HAGIWARA

[Applicant for Patent]

[Id. No.] 000002369